REMARKS

Reconsideration of the present application is respectfully requested. Claims 1, 3-4, 6-8, 10, 12, 14-15, 17, and 19-23 are pending. Claims 1, 10, and 17 have been amended. No claims have been added or canceled. A Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 accompanies this response.

Interview Summary

Applicants wish to thank the Examiner for the telephonic interview conducted on October 22, 2007. During the interview, representative of the Applicants and the Examiner discussed the rejections of claim 1 under § 112, first and second paragraphs, and the rejection of claim 1 under § 103(a). The Examiner and representative of the Applicants did not reach any agreement.

35 U.S.C. § 112 Rejections

Claims 1, 3, 4, and 6-8 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. According to paragraph 42, consistency points (CPs) are executed by the source filer 102 at predetermined intervals or when an NVLog partition is full. At the same time the source filer 102 issues the CP request, the destination filer 104 also updates the volume 112. Paragraph 44 further discloses that when the partition 208 is full, a CP is issued on the source filer 102, and the requests are applied to the volume 110 managed by the source filer 102 and the image volume 112 managed by the destination filer 104. In other words, the volume 110 and its image volume 112 are synchronized in response to the source filer

102 issuing the CP. Thus, the CP inherently includes a synchronization request from the source filer 102 to the destination filer 104. Thus, the limitation at issue is fully supported by paragraph 44 in the Specification. Claims 3, 4, and 6-8 depend, directly or indirectly, from claim 1, and are fully supported by the Specification for at least the above reason. Applicants respectfully request withdrawal of the rejection.

Claims 1, 3, 4, 6-8, 17, 19, and 20 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. Applicants respectfully traverse the rejection. In particular, the Office Action indicated the phrase "applying the data access request" caused confusion in the interpretation of the claim language. Applicants respectfully submitted that the phrase "applying the data access request" is commonly used in the field of data storage systems and is well known by those skilled in the art. Therefore, the claims as they currently stand are clear enough to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. Applicants respectfully request withdrawal of the rejection.

35 U.S.C. § 102(b) Rejections

Claims 21 and 23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yanai et al. (US 6,502,205). Applicants respectfully traverse the rejection.

Claim 21 sets forth:

> using the destination storage server to maintain ***a plurality of files*** in a non-volatile mass storage subsystem, ***each said file corresponding to a separate one of the plurality of source storage servers***;

(Claim 21 as amended; emphasis added)

In contrast, Yanai fails to disclose at least the above limitation. According to Yanai, the system 210 includes a primary data storage system 214 and a secondary data storage system 246. In the secondary data storage system 246 (which was analogized to be the destination storage server in the Office Action), both log file 293 and data file 294 correspond to the log file 291 and the data file 292 of the primary data storage system 214 (which is a single data storage system) (Yanai, Figure 12). The log file 293 and the data file 294 in the secondary data storage system 246 do not correspond to separate storage servers. However, the Office Action argued that the log file and data file in Figure 12 ***inherently*** comprising multiple data files and "each ***file*** in the destination storage system is corresponding to each ***file*** of the primary storage system" (Office Action, p. 15, fourth paragraph; emphasis added). Applicants respectfully disagree with the Office Action.

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic ***necessarily flows*** from the teachings of the applied prior art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). However, each of the log file and data file in Figure 12 does *not necessarily* comprise multiple files because a single log file and/or a single data file would suffice to serve the tracking purpose in Yanai. Therefore, the use of multiple files, each corresponding to a separate one of a plurality of storage servers, does not necessarily flow from the use of log file and data file in Yanai. For at least this reason, Yanai does not inherently disclose the above limitation.

Furthermore, it is respectfully submitted that the Office Action misconstrued the limitation set forth in claim 21 because the limitation does not teach the limitation alleged in the Office Action, i.e., "each ***file*** in the destination storage system is corresponding to each ***file*** of the primary storage system." Rather, claim 21 recites "each said file corresponding to ***a separate one of the plurality of source storage servers***." For the reason discussed above, the log file 293 and the data file 294 in the secondary data storage system 246 in Yanai do not correspond to separate storage servers. Therefore, Yanai fails to anticipate Claim 21. Withdrawal of the rejection is respectfully requested.

Claim 23 depends from claim 21, and thus, is not anticipated by Yanai for the reason discussed above. Withdrawal of the rejection is respectfully requested.

35 U.S.C. § 103(a) Rejections

Claims 1, 3, 4, 6, 10, 12, 14-15, and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yanai et al. (US 6,502,205) in view of Courts el al. (US 5,636,360). Applicants respectfully traverse the rejection.

Claim 1 as amended sets forth:

> ***when the first portion of the non-volatile storage device in the first storage server becomes full, causing the second storage server to apply the data access request*** in the file stored in the mass storage device to an image volume of the volume, wherein the second storage server manages the image volume and the mass storage device, ***wherein the second storage server uses the file to recover data in the image volume if a disaster occurs***.

(Claim 1 as amended; emphasis added)

As admitted in the Office Action, Yanai does not disclose the above limitation (Office Action, p. 8, second paragraph). The Office Action alleged that Courts teaches a method of copying the contents of a ***log buffer*** to a log partition ***when the log buffer is full*** (Office Action, p. 8, third paragraph). Assuming *arguendo* that Courts disclosed such a method, copying the contents of ***a log buffer*** to a log partition when ***the log buffer is full*** is different from the teaching of claim 1 set forth above. Claim 1 as amended is not directed to the scenario discussed in Courts. Rather, claim 1 teaches that, in response to the first portion of the non-volatile storage device in the ***first*** storage server becoming full, the ***second*** storage server is caused to apply the data access request to an image volume. The Office Action analogized the first portion of the log buffer in Courts to be the non-volatile storage device in the first storage server as claimed. Applying the analogy to the subject matter in claim 1, Courts' disclosure of copying the contents of the log buffer to a log partition when the log buffer is full would be analogous to copying the content of the first portion of the non-volatile storage device in the first storage server to a log partition. Courts does not disclose ***causing a second storage server*** to transmit the data access request to an image volume in response to the first portion of the non-volatile storage device in the first storage server becoming full. Therefore, Courts fails to disclose the limitation of claim 1 set forth above.

Since neither Yanai nor Courts, alone or in combination, discloses the limitation set forth above, claim 1 as amended is patentable over Yanai in view of Courts. Withdrawal of the rejection is respectfully requested.

For the reason discussed above with respect to claim 1, claim 10 is patentable over Yanai in view of Courts. Moreover, claims 3, 4, 6-9, 12, and 14-16 depend, directly

or indirectly, from claims 1 and 10, respectively. Thus, having additional limitations, claims 3, 4, 6-9, 12, and 14-16 are patentable over Yanai in view of Courts. Withdrawal of the rejection is respectfully requested.

Claim 22 depends from claim 21, and thus, include every limitation set forth in claim 21. For the reason discussed above with respect to claim 21, Yanai fails to disclose every limitation set forth in claim 21. Furthermore, Courts fails to make up the deficiencies of Yanai. Courts merely discloses copying the content of a log buffer to a log partition when the log buffer is full (Courts, col. 2, ln. 35-37). Courts does not disclose using the destination storage server to maintain ***a plurality of files*** in the non-volatile mass storage subsystem, ***each said file corresponding to a separate one of the plurality of source storage servers***. Since Yanai and Courts, alone or in combination, fail to teach every limitation set forth in claim 22, claim 22 is patentable over Yanai in view of Courts. Withdrawal of the rejection is respectfully requested.

Claims 17 and 19-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yanai et al. (US 6,502,205) in view of McMillan Jr. (US 5,587,390), and further in view of Achiwa et al. (US patent publication 2004/0153719) and Courts. Applicants respectfully traverse the rejection.

Claim 17 as amended sets forth:

> ***applying the data access request in the first file to an image of a volume in response to a specified signal from the first source filer indicating that the first portion of the first nonvolatile memory is full***, wherein the volume is maintained by the first source filer and the image is maintained by the destination filer, wherein the destination storage server uses the first file to recover data in the image of the volume if a disaster occurs;

(Claim 17 as amended; emphasis added)

In contrast, none of Yanai, McMillan, Achiwa, and Courts, alone or in combination, teaches the above limitation. For the reason discussed above with respect to claim 1, none of Yanai and Courts teaches the above limitation.

As to McMillan, the reference discloses that a request is removed from a STI staging queue when the acknowledgement is transferred from the specified disk to the STI module (McMillan, col. 5, ln.35-38). Like Yanai and Courts, McMillan does not teach the limitation of claim 17 set forth above.

Regarding Achiwa, the reference discloses a data storage system having multiple storage apparatuses interconnected to each other (Achiwa, paragraph [0009]). Achiwa does not teach the limitation of claim 17 set forth above.

Since none of Yanai, McMillan, Achiwa, and Courts, alone or in combination, teaches every limitation set forth in claim 17 as amended, claim 17 is patentable over Yanai in view of McMillan, Achiwa, and Courts. Withdrawal of the rejection is respectfully requested.

Claims 19-20 depend directly from claim 17. Thus, having additional limitations, claims 19-20 are patentable over Yanai in view of McMillan, Achiwa, and Courts. Withdrawal of the rejection is respectfully requested.

New Claims

New claims 24-27 have been added without introducing any new matter. Claim 24 is an independent claim and claims 25-27 depend from claim 24. Claim 24 sets forth:

when the first portion of the non-volatile storage device in the source storage server becomes full, transmitting the data access request in the first portion of the non-volatile storage device to a volume managed by the source storage server to cause the volume to be updated according to the data access request, and ***causing the destination storage server to transmit the data access request in the file stored in the mass storage device to an image volume*** of the volume to cause the image volume to be updated according to the data access request.

(Claim 24; emphasis added)

As admitted in the Office Action, Yanai fails to teach when the first portion of the non-volatile storage device in the source storage server becomes full (Office Action, p. 8, second paragraph). Furthermore, the other cited reference, Courts, also fails to teach the above limitation. Courts merely discloses copying the content of a log buffer to a log partition when the log buffer becomes full. Courts does not teach that, when a first portion of the non-volatile storage device in a source storage server becomes full, causing a destination storage server to transmit the data access request in a file stored in a mass storage device to an image volume. Therefore, new claim 24 is patentable over Yanai in view of Courts. Allowance of claim 24 is earnestly solicited.

New claims 25-27 depend from claim 24, and thus, are also patentable over the art of record. Allowance of claims 25-27is earnestly solicited.

Conclusion

For at least the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly solicited.

Applicants respectfully request a telephonic interview with the Examiner before the Examiner takes any further action on the current application. The Examiner is invited to contact the undersigned at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), Applicant hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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